Programme's After Market Services
NHD–4 Series Transceivers

NAM Programming Instructions

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Introduction

A NAM is a structure that contains subscription parameters, such as a phone number and home area. A phone can be equipped with multiple NAMs. The NAMs can be programmed by the dealer either by using service software or the phone keypad or by the user using Over–the–Air Service Provisioning feature (for further details refer to the Over–the–Air Service Provisioning specification). Only the keypad method is described in this specification.

To Access NAM Programming Mode

1. Turn the phone on.
2. Enter the NAM access code. Factory default: *3001#12345
3. Press the Menu softkey.
4. Verify that **NAM 1** appears on the display, indicating that you are in the main NAM programming menu. If **View menu** appears, check to see if you have entered the access code correctly and then repeat from Step 2.

To Make Menu Selection

1. Press the ▲ or ▼ key repeatedly to scroll through the items in the menu.
2. Press the **Select** softkey to select the menu item pointed to by the arrow on the left side of the display. For some items on the main menu, there are 2 levels of submenus. Press the Select softkey to access the sub–menu for these items.

Main Menu

NAM 1
NAM 2
Change SPC *
Security
Emergency
SW version
Serial No.
Programmed
Field test

* Note: This menu entry may not be in all phones.

To Program a NAM

1. Select **NAM 1** or **NAM 2** and use the ▲ or ▼ key to scroll through the submenu. The current value, if any, for each parameter is displayed in the menu.
2. To enter a value for a parameter, press the **Select** softkey to select the parameter, use the numeric keys to enter the value, then press the **OK** softkey to save the value. Press the **Quit** softkey returns to the previous menu without saving the value.

NAM 1 and NAM 2 Submenus

HOME SYSTEM ID
OWN NUMBER
CDMA SETTINGS
    PRIMARY CDMA CH A
    SECONDARY CDMA CH A
    PRIMARY CDMA CH B
    SECONDARY CDMA CH B

SID LISTS
Home SIDs
SID 1
. . . .
Preferred
PREFERRED SID 1
. . . . .
Forbidden
FORBIDDEN SID 1
. . . . .
NETWORK CODE
COUNTRY CODE
DEFAULT SETTING
DIRECTORY NUMBER
NAM STATUS
ACCESS METHOD
LOCAL OPTION
PRIMARY PAGING CH
GROUP ID
A–KEY

Note 1. *When the current values of the Own Number and Directory Number are the same, changing the Own Number will also change the Directory Number to the same new value, otherwise only the Own Number will be changed. The Directory Number can be changed individually if needed.*

Note 2. *During entering the Own Number or the Directory Number, a text message (an alphanumeric name for the NAM) may be entered after pressing the **ABC** key.*

Note 3. *If the a valid value is entered for a parameter, the phone displays **ACCEPTED**. If an invalid value is entered, the phone displays **INVALID VALUE** or **CODE ERROR**.*

Note 4. *If the **Service prog. code:** appears, you need to enter a valid Service Programming Code (SPC) before you can proceed to change the selected parameter or any other parameters that are programming lock protected. Contact the service provider for the SPC.*

A–Key Code

The A–Key code can also be programmed without getting into the NAM Programming mode.

1. Turn the phone on.
2. Enter **2539** **Menu** **Menu**
3. Use the ▲ or ▼ key to scroll to the desired NAM and then press **Select**.
4. Enter the new A–Key value provided by the service provider.
5. Press **OK** to store the new value.

SID Lists

SID Lists are programmed to control the system selection/re–selection processes and priority. Four SID Lists can be programmed in Nokia 2180 for each NAM.

- Home SID list which can contain up to 4 SID's that are considered as home systems,
- Preferred SID list which can contain up to 80 SID's that are considered as preferred systems
- Forbidden SID list which can contain up to 5 SID's that are considered to be forbidden systems.

In acquiring service, the unit will give priority to home systems, then preferred systems among all available serving systems. Forbidden systems are not used except for making calls to pre–programmed emergency numbers when no other systems are available.

To program a SID list

1. Select **SID Lists** from the main menu.
2. Select the SID list to be programmed.
3. Select the first empty location or the location of a value in the list you wish to change.
4. Enter a new SID value.
5. Repeat Steps 2 through 4 for all SID lists you wish to program.

Note 5. *When programming the SID lists, duplicate SIDs in the same list are not allowed; duplicate SIDs between the Home SID or Preferred SID list and the Forbidden SID list are not allowed; duplicate SIDs between the Home SID and Preferred SID lists are allowed only once for any pair of SIDs.*

To temporarily remove a SID from the SID lists

For testing purposes, a SID can be temporarily removed from the SID lists without getting into NAM Programming mode. The SID lists are restored when the phone is powered off and on. Only up to 5 SIDs can be removed within any period between when the phone is powered on and off. This applies to duplicate SIDs also.

1. Enter ***#remove<SID_number>#**

To Program Service Programming Code

1. Select **Change SPC** from the main menu.
2. Enter the current SPC. Contact the service provider for the valid SPC.
3. Enter a new valid SPC and re–enter to verify it.

To Program Security Code

1. Select **Security** from the main menu and verify the current 5–digit security code is displayed. Factory default: 12345
2. If the displayed value is incorrect, re–enter the value.

Note 6. *After the security code is programmed, the lock code of the phone is set to the last 4 digits of the security code.*

To Program Emergency Numbers

1. Select **Emergency** from the main menu and use the ▲ or ▼ key to scroll through the submenu. The current number, if any, for each number is displayed in the menu.

   Emergency Submenu

   EMERGENCY NUMBER 1
   EMERGENCY NUMBER 2
   EMERGENCY NUMBER 3

2. To enter a value for an emergency number, press the **Select** softkey to select the emergency number entry, use the numeric keys to enter the number, then press the **OK** softkey to save the value. Press the **Quit** softkey returns to the previous menu without saving the number.

To Enter Programming Date

1. Select **Programmed** and enter the date in the format of **MMYY**, where MM= month, YY= year
   (e.g. 1296 is Dec 1996)

   The Programming Date can be entered only once, which should be during the first time the phone is being programmed and delivered to the customer. Once programmed, the programming date can not be viewed or changed in NAM Programming mode.

To View Other Information

1. To view the software version, the date of the software and the type of the phone, select **SW version**.
2. To view the serial number of the phone, select **Serial No**.
3. To activate the field test mode, select **Field test** and change the setting to **Enabled**. See the **Field Test Mode** section for more details.

To Exit NAM Programming Mode

1. Turn the phone off and leave it off for 10 seconds. The changes to the NAM parameters will take effect upon the next time the phone is turned on.

Default NAM Parameter Settings

These settings apply to both NAM 1 and NAM 2 unless stated otherwise. Values are shown in decimal format.

Parameter	Default Setting	Valid Values
Home System ID	Varies	1 – 32767
Own Number (Phone No. associated with NAM, more specifically known as the MIN)	000 000 XXXX (where XXXX is the last 4 digits of ESN)	10 digits; Contact Service Provider
Directory Number (Phone No. associated with NAM, more specifically known as the MDN)	000 000 XXXX (where XXXX is the last 4 digits of ESN)	10 digits; Contact Service Provider
Alpha Tag for the NAM	Empty	15 characters
NAM Status	NAM 1: Enabled; NAM 2: Disabled	Enabled/Disabled
Access Method	1	0,1
Local Option	1	0,1
Primary Paging Channel	If the HOME SYSTEM ID setting is odd, the A type channel default is used. If it is even, the B type paging channel default is used. A type channel: 333 B type channel: 334	0 – 2047
Group ID	10	0 – 15
A–Key	NAM1: Random NAM2: Default	6 – 26 digits; Contact Service Provider
Primary CDMA Channel A	283	1 – 311
Secondary CDMA Channel A	691	689 – 694
Primary CDMA channel B	384	356 – 644
Secondary CDMA channel B	777	739 – 777
Home SID List	SID 1 = Home System ID; All other SIDs are empty.	1 – 32767 for each SID. Up to 4 unique SIDs
Preferred SID List	Empty	1 – 32767 for each SID. Up to 80 unique SIDs
Forbidden SID List	Empty	1 – 32767 for each SID. Up to 5 unique SIDs
Network Code	0	0 – 99
Country Code	0	0 – 999

Default Common Parameter Settings

Parameter	Default Setting	Valid Values
Service Programming Code	000000 or random	000000 – 999999 Contact Service Provider
Security Code	12345	
Lock Code	1234	
Emergency Numbers	911, *911, empty.	
SW Version	Current MCUSW version number (Read Only)	
Serial Number (ESN)	ESN of the phone (Read Only)	
Programmed Date	Empty	MMYY, where MM=month, YY=year
Field Test	Disabled	Enabled/Disabled

Field Test Mode

The Field Test Mode is used to investigate how the phone and cellular system interact. When this mode is activated, the phone displays dynamically information regarding signal strength, battery charging status, and cellular state. Use the ▲ or ▼ keys to scroll through the test displays. The index display (the number on the upper right–hand corner) shows the display number for the current test display. Pressing the **ABC** key shows the help texts (e.g. test parameter names, etc.), if any, for the corresponding information on the test display.

CDMA Field Test Displays

When the phone is in CDMA (digital) mode, the following information is displayed. Note that in order to see the Test Parameter Names, you need to be in Alpha mode by pressing the **ABC** key.

Display Number	Test Parameter Name	Description
1	CSST	Cellular Software state
1	XXXXX	CDMA Traffic Channel: number of active pilots, FER CDMA Paging Channel: Pilot PN offset
1	RSSI	CDMA: RSSI
1	CCCC	CDMA: Paging Channel Number
1	RX	CDMA: Rx instantaneous power
1	TX	CDMA: Tx instantaneous powel
2	CS STATE	CS State
2	PGCH	Paging Channel Number
2	CURSO	Currently active Service Option(Traffic Channel Onlyt)
2	FER	Frame Error Rate (Traffic Channel Only)
3		THIS DISPLAY IS NOT USED
4	OWNNUMBER	Mobile station MIN
4	ESN	Mobile station ESN (i.e. 156–03145864)
4	SL	Selected System(A for SemiAuto A,B for SemiAuto–B, H for Home Area, AB – Automatic)
4	P	Preferred System (’B’– for even HomeSID, ’A’ for Odd Home SID)
4	MD	Mode (AN – Analog, DI– Digital, AD – Analog and Digitial)
5	PPCA	Primary Channel A
5	SPCA	Secondary Channel A
5	PPCB	Primary Channel B
5	SPCB	Secondary Channel B
5	LOCAL	Local use
5	AOC	Access Overload Class
6	SID	Current SID
6	NID	Current NID
6	HANDSFREE	Handsfree Mode (YES, NO)
7	BASE_ID	BASE_ID (System Parameters)
7	P_REV	P_REV (Sync Channel Message)
7	MIN_P_REV	MIN_P_REV (Sync Channel Message)
8	CS STATE	CS State
8	MMDDYY	Date from system time

8	HHMMSS	System Time
9	TA	TADD
9	TD	TDROP
9	TC	TCOMP
9	TT	TTDROP
9	WW1	Window Size for Active Set
9	WW2	Window Size for Neighbor Set
9	WW3	Window Size for Remaining Set
10, 11	PPN	Pilot PN Offset – Active Set
10, 11, 12 – 15	EC	Ec/Io – Active Set
10, 11	K	Keep – Active Set
10, 11	WCC	Walsh code channel – Active Set
12 – 15	PPN	Pilot PN Offset – Neighbor Set
12 – 15	EC	Ec/Io – Neighbor Set
16	PPN	Pilot PN Offset – Candidate Set
16	EC	Ec/Io – Candidate Set
17 – 24		THIS DISPLAY IS NOT USED
29	Software Version	This screen displays the software version and date it's released
30		THIS DISPLAY IS NOT USED

AMPS Field Test Displays

When the phone is in AMPS (analog) mode, the following information is displayed. Note that in order to see the Test Parameter Names, you need to be in Alpha mode by pressing the **ABC** key.

Display Number	Test Parameter Name	Description
1	RSSI	Received Signal Strength
1	S	Supervisory Audio Tone
1	R	Data receiving status
1	CHAN	Channel Number
1	P	Power Level
1	A	Audio
1	CSST	CS State
2	RSSI	Received Signal Strength
2	XSTBY	Extended Standby
2	E	Encryption Mode
2	SID	Base Station ID
3		THIS DISPLAY IS NOT USED
4	OWNNUMBER	Mobile station MIN
4	ESN	Mobile station ESN (i.e. 156–03145864)
4	SL	Selected System(A for SemiAuto A,B for SemiAuto–B, H for Home Area, AB – Automatic)
4	P	Preferred System (’B’– for even HomeSID, ’A’ for Odd Home SID)
4	MD	Mode (AN – Analog, DI– Digital, AD – Analog and Digitial)
5	HANDSFREE	Handsfree Mode (YES, NO)
6 – 13, 21 – 28		THIS DISPLAY IS NOT USED
14, 29	Software Version	This screen displays the software version and date it’s released
15, 30		THIS DISPLAY IS NOT USED

Terms Definitions

A–Key (Authentication Key) A secret, 64–bit pattern stored in the mobile station and HLR/AC. It is used to generate/update the mobile station's Shared Secret Data.

Access Method An indicator used to determine if the extended address word must be included in all access attempts.

Country Code A part of the IMSI identifying the home network within the home country. Also known as the Mobile Country Code (MCC).

Emergency Numbers The local standard emergency numbers, after being programmed into the phone, to which calls can be attempted regardless of the phone being locked or having any call restrictions active.

Forbidden SID List A list of system identification numbers that identify systems that provide service to the mobile station only for emergency calls.

Group ID A subset of the most significant bits of System Identification (SID) that is used to identify a group of cellular systems.

Home SID List A list of system identification numbers that identify the mobile station's home system(s). These systems provide service to the mobile station without any roaming charges.

Home System ID A 15–bit system identification number used to identify the mobile station's home system.

IMSI (International Mobile Station Identity) A method of identifying stations in the land mobile service.

Local Option An indicator to enable or disable the local control option.

Lock Code A 4–digit code to use the Automatic Lock feature in the phone.

MIN (Mobile Identification Number) The 34–bit number that is a digital representation of the 10–digit number assigned to a mobile station.

MDN (Mobile Directory Number) The 10–digit phone number assigned to a mobile station.

NAM (Number Assignment Module) A set of MIN/IMSI–related parameters stored in the mobile station.

NAM Status An indicator to determine whether the associated NAM is enabled or disabled.

NID (Network Identification) A number uniquely identifying a network within a cellular system.

Network Code A part of the IMSI (IMSI_11_12) identifying the home network within the home country. Also known as the Mobile Network Code (MNC).

Own Number The 10–digit phone number associated with each NAM used to identify the mobile station. Also known as the Mobile Identification Number (MSIN).

Preferred SID List A list of system identification numbers that identify systems that provide service to the mobile station at discounted roaming charges.

Primary CDMA Channel A The CDMA Channel used by the mobile station for initial acquisition for system A.

Primary CDMA Channel B The CDMA Channel used by the mobile station for initial acquisition for system B.

Primay Paging Channel The first paging channel used when the mobile station is “home.”

Secondary CDMA Channel A The CDMA Channel used by the mobile station for initial acquisition for system A if the Primary CDMA Channel A is not available.

Secondary CDMA Channel B The CDMA Channel used by the mobile station for initial acquisition for system B if the Primary CDMA Channel B is not available.

Security Code A 5–digit code that guards the access to certain security features in the phone.

Serial Number A 32–bit number assigned by the mobile station manufacturer, uniquely identifying the mobile station equipment. Also known as the Electronic Serial Number (ESN).

SPC (Service Programming Code) A 6–digit security code that protects certain critical NAM parameters from being changed by unauthorized personnel.

SID (System Identification) A number uniquely identifying a cellular system.

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